Balancing Needs, Requirements and Affordability through Integrated Planning

CSO/Wet Weather Issues Specialty Conference

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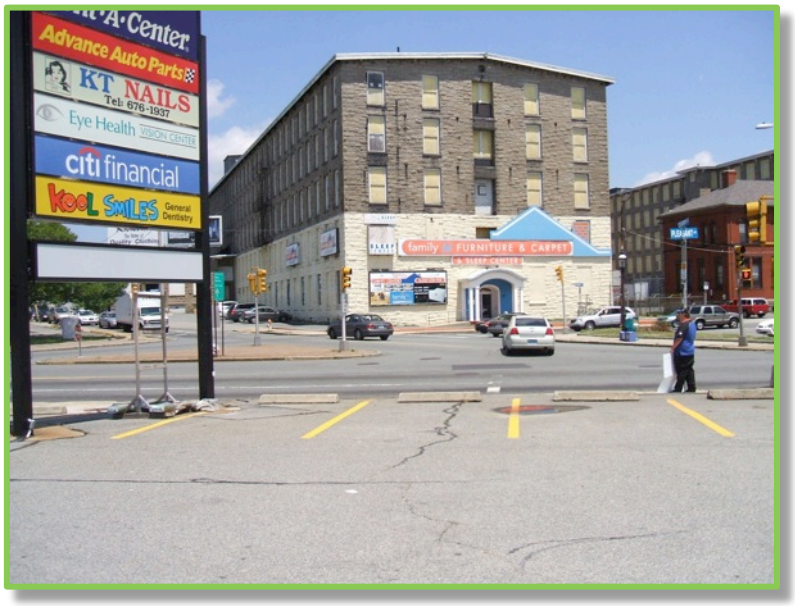
CDM Smith

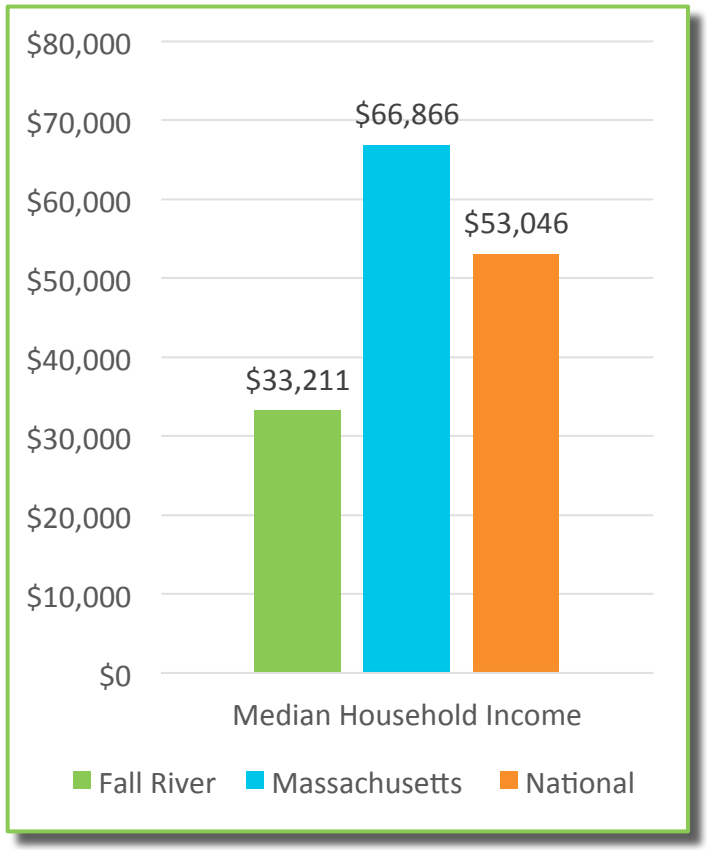
Background

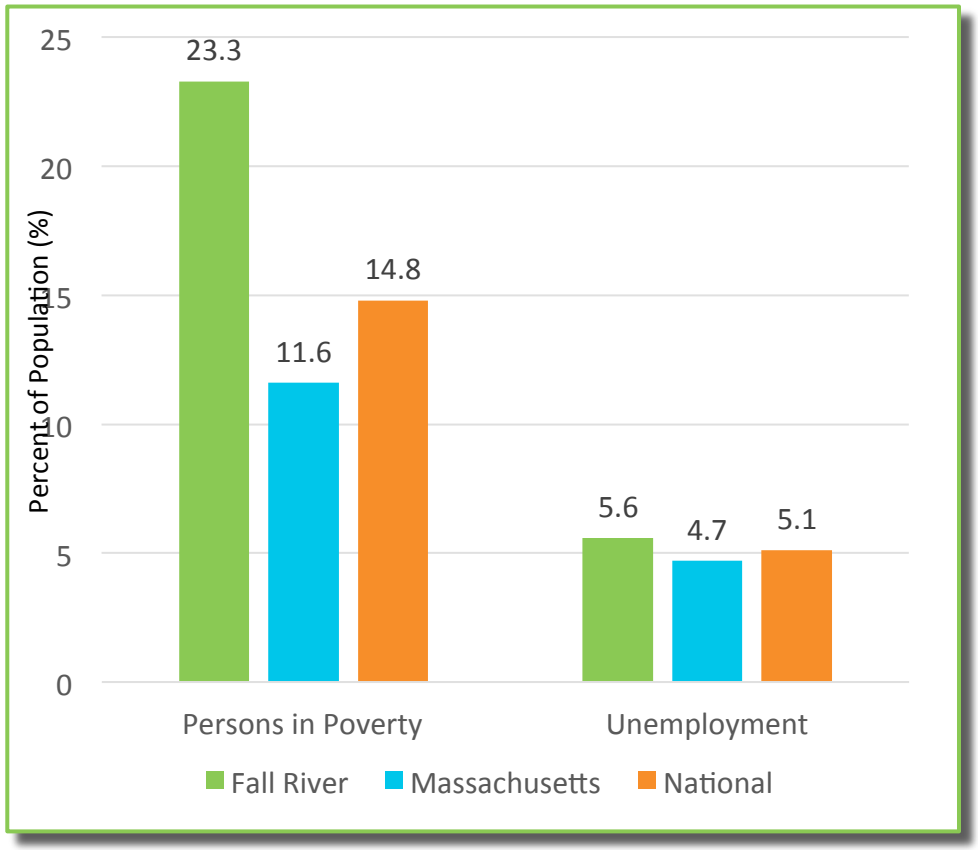
- Once the largest textile producer in the U.S.; now very little industry remains
- Portions of sewer infrastructure date back to late 19th century
- Many combined sewers cannot support current development
  - Chronic street flooding
  - CSOs
  - SSOs
- Shallow bedrock and urban soils=higher project costs



Fall River, Massachusetts Statistics

- Population: 88,700+ (2014 estimate)



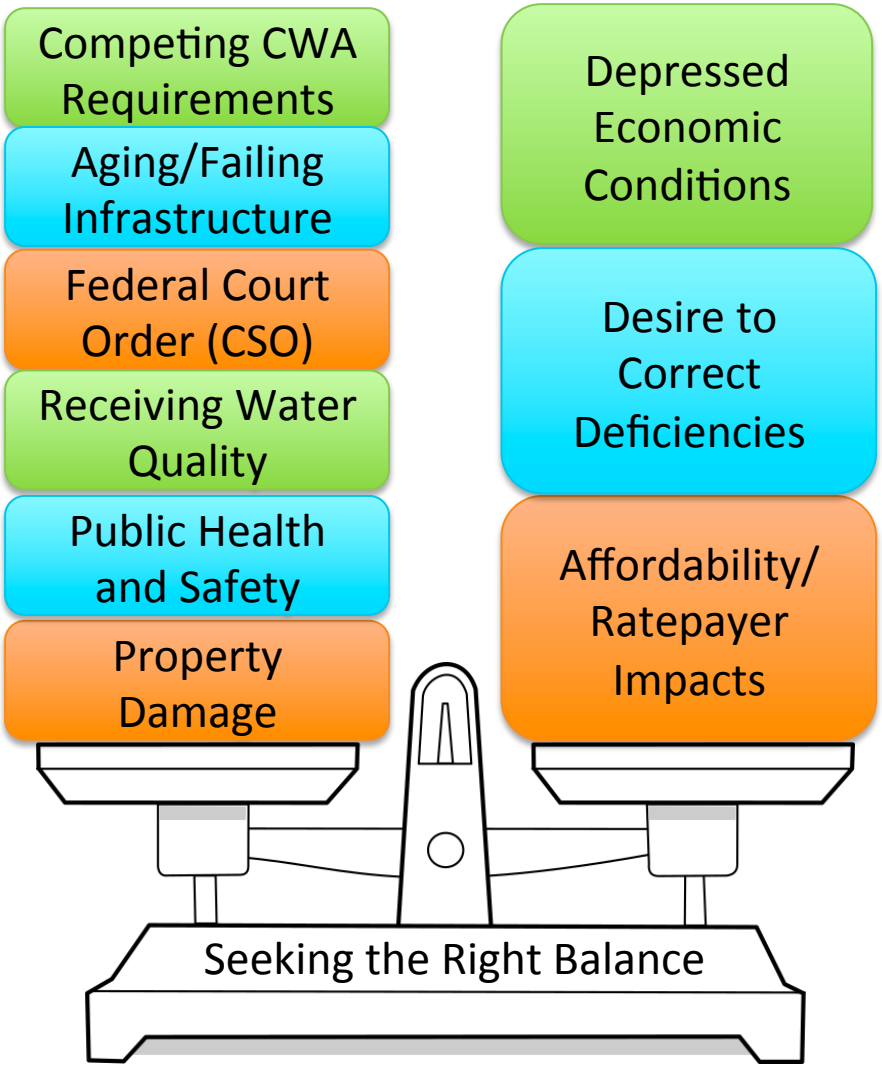


Sources: US Census American Bureau, Community Survey and US Bureau of Labor Statistics (10/2015)

City at a Crossroads…

- Aging/failing infrastructure
- Unfunded regulatory/legal mandates
- Depressed economic conditions
- Public/governmental reluctance to raise rates
- Need to find the right balance of needs, requirements, and affordability

Why Do Integrated Planning?



Integrated Planning Process

- Define Issues and Goals
- Problem Identification
- Develop Resolution Concepts
- Assessments/CIP Development
- Affordability Analysis
- Propose Metrics for Success

Integrated Planning Issues and Goals

- Water quality objectives
- Public health/safety
- Regulatory/legal requirements
- Need for infrastructure renewal
- Holistic implementation approach
- Green infrastructure and energy efficiency
- Affordable solutions
- Public awareness/support
- A sustainable, affordable, long-term Capital Improvements Program (CIP)

Triple Bottom Line

Project Drivers: Regulatory/Legal

Wastewater

- Municipal NPDES Permit
- Federal Court Order (CSO)
- EPA Administrative Order (SSO)
- Water Quality Standards/TMDLs
- Clean Air Act (Title V) Permit for WWTF

Stormwater

- NPDES Massachusetts MS4 Permit
- Water Quality Standards/TMDLs
- Source Water Assessment and Protection (SWAP)

Project Drivers: Institutional

- System reliability/infrastructure renewal
- Staffing and equipment needs
- Asset management
- Additional or revised policies
- Additional or revised O&M procedures

Project Drivers: Social

- Public health and safety
- Chronic flooding
- Property damage
- Environmental impacts
- Affordability

Over 100 Projects Identified

- Working together with City staff and multiple consultants
- Coordination DEP/EPA

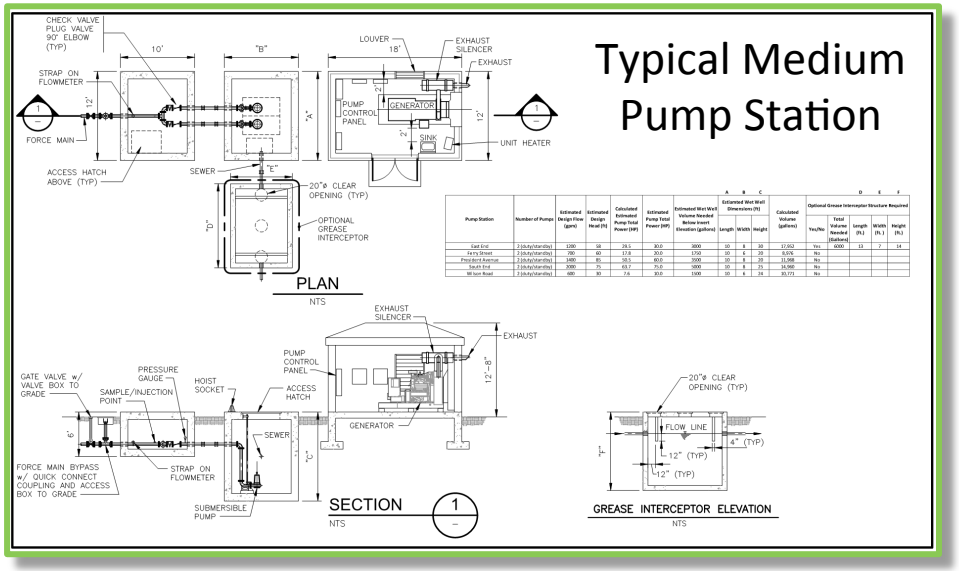
Project Type	Projects Identified
Wastewater Treatment Plant	7
Wastewater Pump Stations	15
CSO Control	13
Wet-Weather SSO Control	22
Infrastructure Renewal	9 + Annual Program
Stormwater	20
Source Water Protection	7
Organizational/Institutional	6

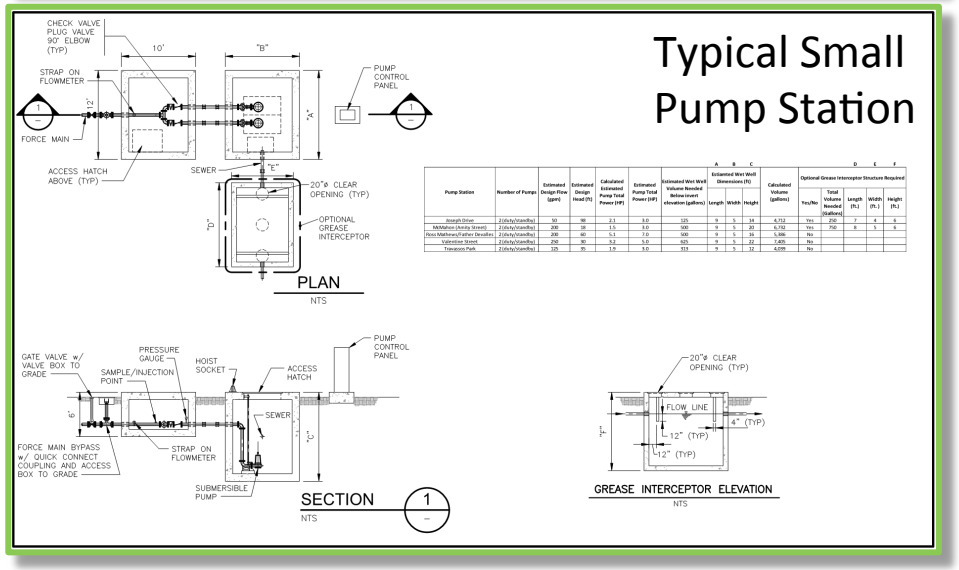
Wastewater Treatment Facility

- Aging infrastructure
- Rehabilitation program
  1. Solids processing/ operations
  2. Preliminary treatment
  3. Secondary treatment
  4. Primary treatment/ disinfection/outfall
- Nitrogen removal upgrade
  - NPDES permit schedule (TBD)
- Maintenance vehicles and garage
- Wind turbine
- 7 projects

Wastewater Pump Stations

- Remote facilities
- Most have little to no flow monitoring or SCADA
- Aging infrastructure
- Several constructed by developers
- 15 pump station projects
  - 11 to be replaced
  - 2 require upgrade
  - Uniform design approach recommended
  - 2 recently upgraded (future rehabilitation)



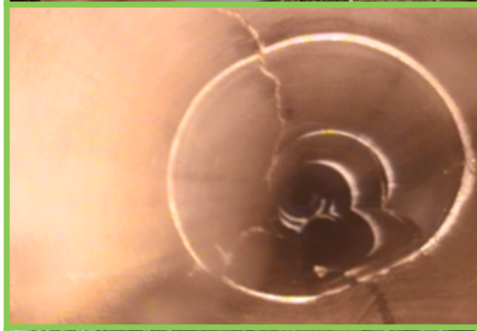


CSO Control

- Complete CSO Abatement Program
  - Remaining Federal Court Order projects
  - Must be completed by 2025
  - 7 projects
- Maintenance of existing CSO controls
  - Sediment build-up
  - Corrosive environment
  - Condition
  - 6 projects

Sewer Infrastructure

- Infrastructure management/ dry-weather SSO control
  - Infrastructure renewal
  - Infiltration/inflow removal
  - 9 projects plus annual renewal program
- Wet-weather SSO control
  - Sewer separation
  - Increased sewer size/capacity
  - 22 projects



Stormwater Infrastructure

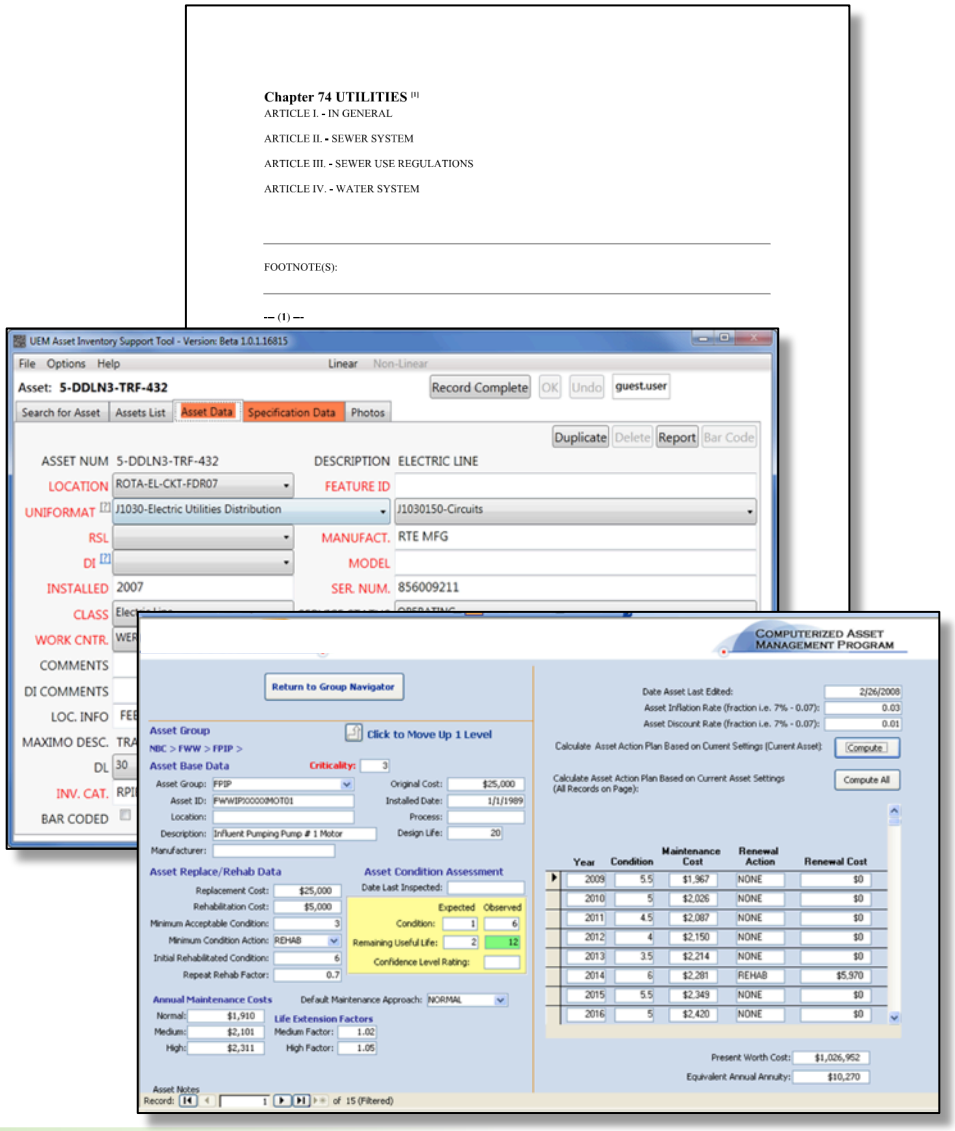
- Address chronic street flooding
- Restore storage potential of river, brooks and channels
- Control strategy
  - Additional infrastructure
  - Infrastructure renewal
  - Cleaning and dredging of river, brooks and channels
  - Massachusetts MS4 Permit compliant
- 20 projects

Source Water Protection

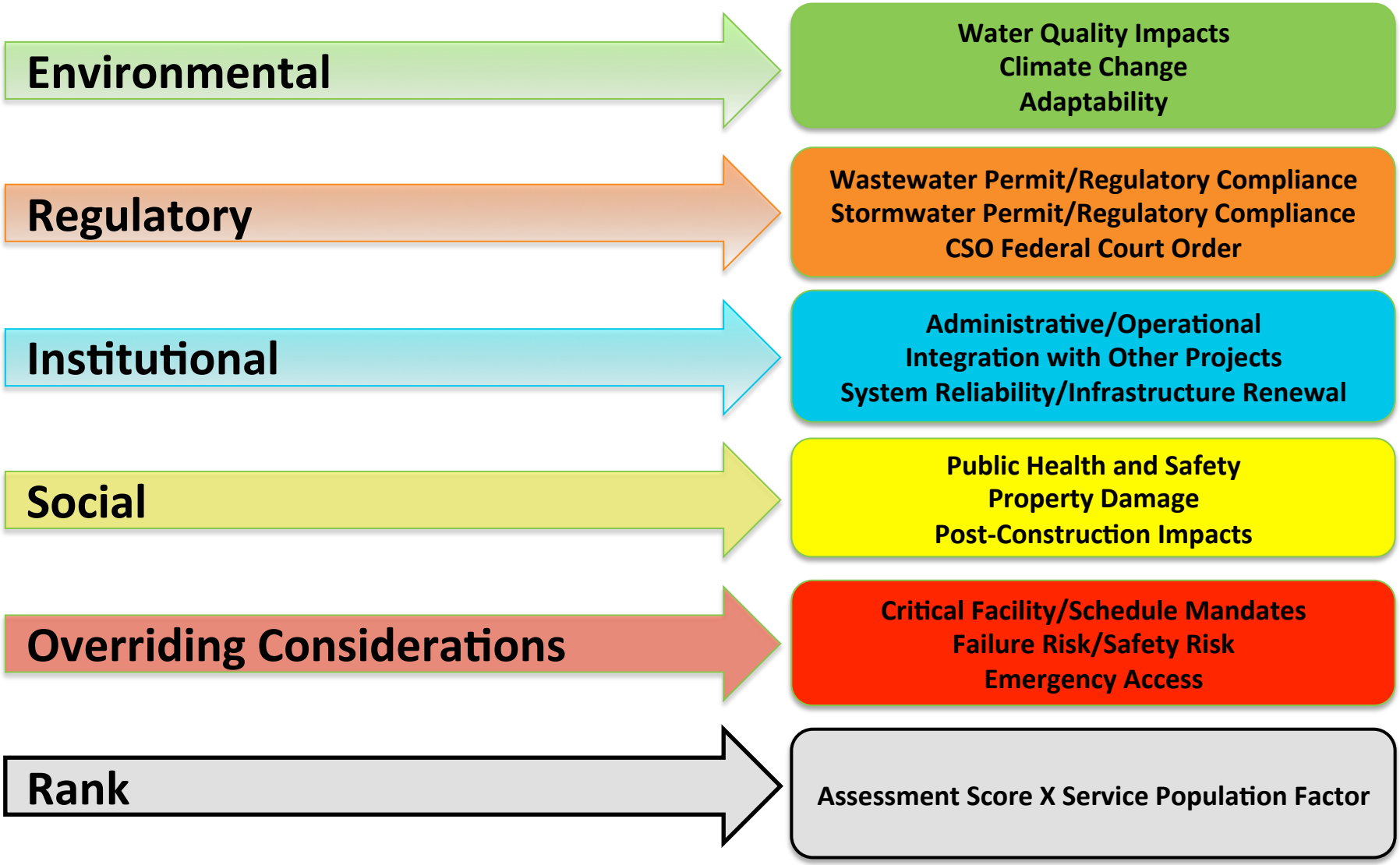
- Stormwater improvements to protect drinking water supply
- Compliant with SWAP report recommendations
- Watershed protection
- Flow interception
- 7 projects

Organizational/Institutional Modifications

- Expanded O&M
- Asset management
- Computerized maintenance management system (CMMS)
- New/amended ordinances or policies
- Additional staffing/ equipment
- 6 projects



Non-cost Assessment/Ranking

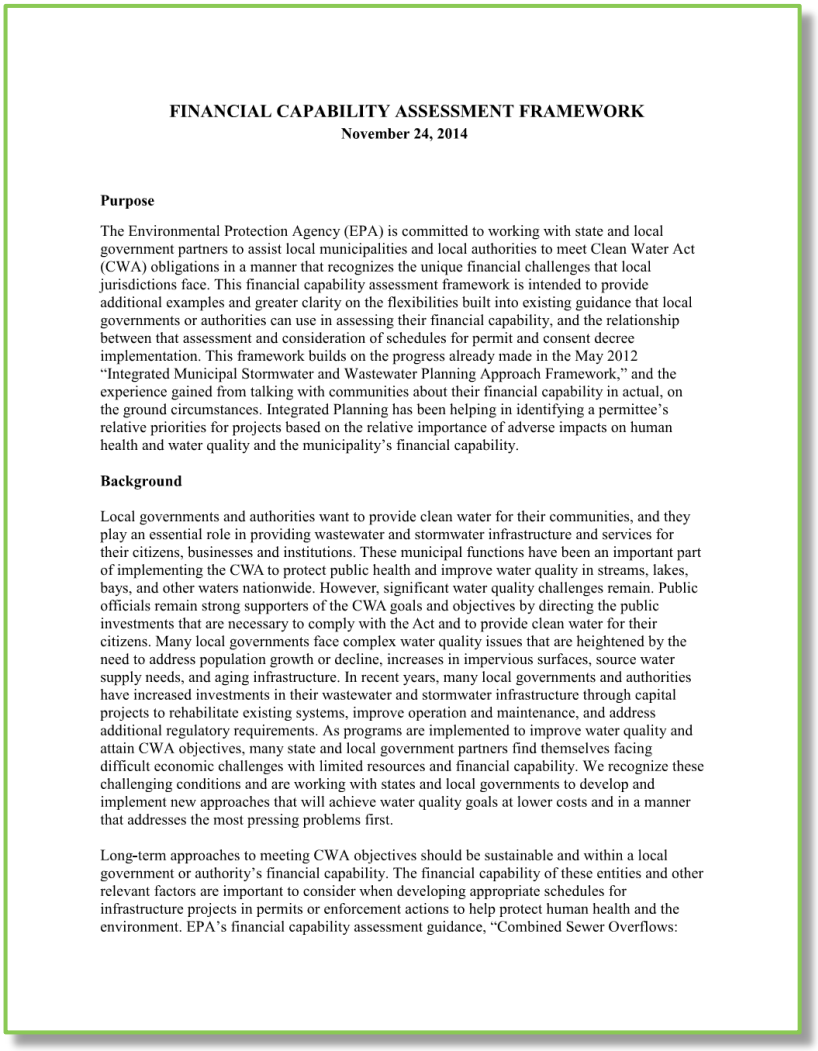


CIP Development/Scheduling

- Project groupings in $100-200M bundles
  - Highly ranked projects first
  - Meet mandated implementation schedules
  - Multi-year programs of varied projects
- Re-evaluate rankings periodically
- Support=Implementation
  - Public vote required for local funding
  - Strategic project groupings to address a range of issues
  - Program must be affordable
  - Public/governmental support are necessary

Affordability Analysis

- Rate Impact Sensitivity Analysis
  - Determine the impact of spending on sewer and stormwater rates ($10M/year, $20M/year, $30M/year)
- Financial Capability Assessment
  - Follows EPA Framework (2014)
  - Residential Indicator (% of MHI)
  - Financial Capability Indicators
- Funding Opportunities
  - State Revolving Fund
  - MEMA/FEMA
  - Others



FINANCIAL CAPABILITY ASSESSMENT FRAMEWORK
November 24, 2014

Purpose

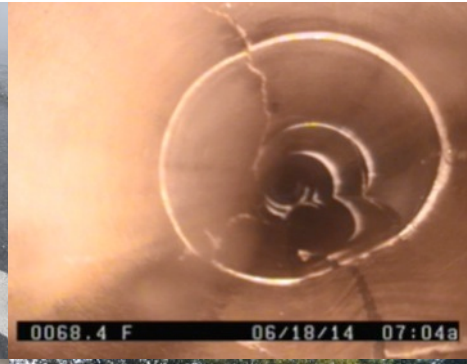
The Environmental Protection Agency (EPA) is committed to working with state and local government partners to assist local municipalities and local authorities to meet Clean Water Act (CWA) obligations in a manner that recognizes the unique financial challenges that local jurisdictions face. This financial capability assessment framework is intended to provide additional examples and greater clarity on the flexibilities built into existing guidance that local governments or authorities can use in assessing their financial capability, and the relationship between that assessment and consideration of schedules for permit and consent decree implementation. This framework builds on the progress already made in the May 2012 "Integrated Municipal Stormwater and Wastewater Planning Approach Framework," and the experience gained from talking with communities about their financial capability in actual, on the ground circumstances. Integrated Planning has been helping in identifying a permittee's relative priorities for projects based on the relative importance of adverse impacts on human health and water quality and the municipality's financial capability.

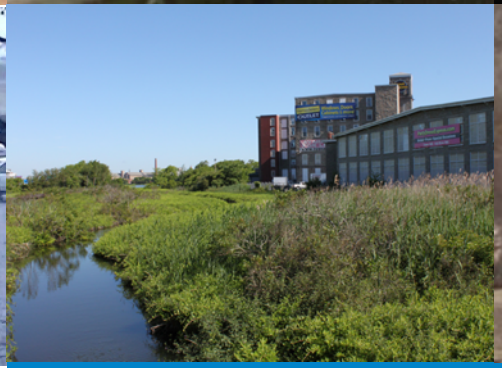
Background

Local governments and authorities want to provide clean water for their communities, and they play an essential role in providing wastewater and stormwater infrastructure and services for their citizens, businesses and institutions. These municipal functions have been an important part of implementing the CWA to protect public health and improve water quality in streams, lakes, bays, and other waters nationwide. However, significant water quality challenges remain. Public officials remain strong supporters of the CWA goals and objectives by directing the public investments that are necessary to comply with the Act and to provide clean water for their citizens. Many local governments face complex water quality issues that are heightened by the need to address population growth or decline, increases in impervious surfaces, source water supply needs, and aging infrastructure. In recent years, many local governments and authorities have increased investments in their wastewater and stormwater infrastructure through capital projects to rehabilitate existing systems, improve operation and maintenance, and address additional regulatory requirements. As programs are implemented to improve water quality and attain CWA objectives, many state and local government partners find themselves facing difficult economic challenges with limited resources and financial capability. We recognize these challenging conditions and are working with states and local governments to develop and implement new approaches that will achieve water quality goals at lower costs and in a manner that addresses the most pressing problems first.

Long-term approaches to meeting CWA objectives should be sustainable and within a local government or authority's financial capability. The financial capability of these entities and other relevant factors are important to consider when developing appropriate schedules for infrastructure projects in permits or enforcement actions to help protect human health and the environment. EPA's financial capability assessment guidance, "Combined Sewer Overflows:





Summary

- Significant need, limited funds
- Desire to correct deficiencies
- Need to implement in an affordable manner
- Plan provides a tool to help balance costs and objectives

Questions